Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A direction finding radiation detector for detecting a direction of incidence of radioactive rays, the detector comprising:

three or more scintillators, formed by splitting a single scintillator in a circumferential direction and being arranged to overlap circumferentially, such that: (1) the scintillators are shadowed by each other from radioactive rays incident in circumferential directions, (2) the light emitted from one of the scintillators is not incident on the other scintillators; and (3) the direction of incidence is detected all around in the range of 0° to 360°,

photoreceptor devices each having a light receiving surface optically coupled to each of the scintillators, wherein

a combination of proportions of radioactive rays incident directly on the respective scintillators and radioactive rays incident indirectly, being shadowed by the other scintillators, varies with the direction of incidence circumferentially, ~~and~~

the scintillators are connected to amplifiers having respective different gains to shift peak positions with each other, the amplifiers are connected to a single A/D converter, and the A/D converter is connected to a single pulse height analyzer, and

the detector is connected to a computer that calculates a ratio R of counts of photoelectric peaks ascribable to the scintillators by calculating a sum total T and ratios R = (A/T, B/T, C/T), wherein A, B and C are counts of the photoelectric peaks.

2-7. (Canceled)

8. (Previously Presented) A radiation monitoring method comprising the steps of

setting the direction finding radiation detector according to claim 1; and

measuring a circumferential radiation using the direction finding radiation detector.

9. (Previously Presented) A radiation monitoring apparatus comprising the direction finding radiation detector according to claim 1.

10. (Currently Amended) A direction finding radiation detector for detecting a direction of incidence of radioactive rays, the detector comprising:

three or more scintillators, formed by splitting a single scintillator in a circumferential direction and being arranged to overlap circumferentially, such that: (1) the scintillators are shadowed by each other from radioactive rays incident in circumferential directions, (2) the light emitted from one of the scintillators is not incident on the other scintillators; and (3) the direction of incidence is detected all around in the range of 0° to 360°,

photoreceptor devices each having a light receiving surface optically coupled to each of the scintillators, wherein

a combination of proportions of radioactive rays incident directly on the respective scintillators and radioactive rays incident indirectly, being shadowed by the other scintillators, varies with the direction of incidence circumferentially, ~~and~~

the scintillators are connected to amplifiers having respective different gains to shift peak positions with each other, the amplifiers are connected to a single A/D converter, and the A/D converter is connected to a single pulse height analyzer, and

the detector is connected to a computer that calculates a ratio R of counts of photoelectric peaks ascribable to the scintillators by calculating a sum total T and ratios R = (A/T, B/T, C/T), wherein A, B and C are counts of the photoelectric peaks.

11-12. (Canceled)

13. (Previously Presented) A radiation monitoring method comprising the steps of

setting the direction finding radiation detector according to claim 10; and

measuring a circumferential radiation using the direction finding radiation detector.

14. (Previously Presented) A radiation monitoring apparatus comprising the direction finding radiation detector according to claim 10.